# CAS RATING SEMINAR
# MARCH 16-17, 1988
# INVOLUNTARY MARKETS
# COMMERCIAL AUTOMOBILE

# COMMERCIAL AUTOMOBILE INVOLUNTARY
# 1988 CAS RATEMAKING SEMINAR
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The following is the material presented at the 1988 CAS Ratemaking Seminar. Although the actual presentation was given from an outline and notecards, this would be approximately the script that would have been used.

## INTRODUCTION

Many of you may be wondering why the topic of Involuntary Markets is on the schedule for the Ratemaking Seminar this year. One only need look at the trade press to see an article on the Massachusetts involuntary auto market and its problems, the Maine workers compensation pool or the New Jersey personal auto JUA. The problems that the industry faces from any of these situations could likely be a seminar topic in itself.

I will be addressing the Commercial Automobile Involuntary Markets. The results for fiscal year 1985 have a $29 million operating loss with $140 million of written premium and $93 million of earned premium. Fiscal year 1986 has a $74 million operating loss with $561 million of written premium and $386 of earned premium. The significant growth in written premium seen from 1985 to 1986 is also seen from 1986 to 1987.

## DIFFERENT MECHANISMS

There are seven different mechanisms currently being used for Commercial Automobile involuntary markets in the 51 jurisdictions (the 50 states plus the District of Columbia). See Exhibits I and Ia.

The most predominant pool type is the CAIP (Commercial Automobile Insurance Procedure). It is used in 39 jurisdictions. CAIPs operate with a limited number of servicing carriers. The results are accounted as 100% ceded business with the results being shared by all companies. The reserves are held by the participating companies. CAIP reserves are the sum of the reserves determined and reported by the servicing carriers. Some of the CAIPs are called "limited CAIPs" because they don't include the light and medium trucks which are part of the private passenger automobile involuntary market.

There are 3 states with SRDP (Special Risk Distribution Program) for their residual market. Again, these operate with a limited number of servicing carriers and their results are shared by all companies. For most purposes, SRDP can be considered a CAIP with a different name.

There are 4 JUAs (Joint Underwriting Associations) in operation. Again, the JUA has a limited number of servicing carriers and the results are shared by all companies. The reserves are held by the plan and the participation results include the investment income earned from the reserves. In truth, both CAIP and SRDP are considered modified JUAs.

There is one state fund in operation in Maryland. Private insurers are required to subsidize any losses and are permitted to charge back the cost against their own policyholders.

There is also one reinsurance facility in operation. Each insurer must provide coverage and service to any applicant - "take-all-comers". Each carrier is permitted to cede a certain percentage of their writings to the facility. The profit or loss is shared among all licensed companies. The participation is based on market share and use of the facility.

There are 2 AIPs (Automobile Insurance Plans). These are the true assigned risk mechanisms which will be explained further in the personal auto segment of this session. AIPs operate with CAIP or SRDP in additional states for the non-fleet and personal lines risks. Large fleets usually are not subject to AIP (except in these two states) because of the large amount of money at risk for a single policy.

Finally, there is one plan mechanism called "other". This is CAR (Commonwealth Automobile Reinsurers) in operation here in Massachusetts. CAR is a modified JUA with a limited number of servicing carriers. Participation in CAR is based on voluntary market share.

The base for participation in results or assignments, or assessment base, is typically the voluntary market share (excluding involuntary writings) from two years prior. The 2 year lag means that 1988 results are based on 1986 market share. The exceptions as noted above are Massachusetts CAR and the South Carolina Reinsurance Facility.

## RATEMAKING IMPLICATIONS

Given the seven different mechanisms, how do we reflect the differences in ratemaking? For the most part, we don't treat them differently. The difference in treatment for ratemaking comes from the size of the involuntary load. Only in the largest few states do we actually look at the mechanics of the plan while doing ratemaking. In the states of Massachusetts, New Jersey and South Carolina, we have to more accurately forecast the involuntary load since these states have the largest pools.

## PLAN SIZES

Given this, let's take a look at the pool sizes in the 51 jurisdictions. The pool size is expressed as a market share for the involuntary markets as a percent of the total market. Exhibits II and IIa show the total market share (liability and physical damage). Exhibits III and IIIa show the same information for liability only since many of the pools write only liability and do not write physical damage. The pool sizes break down as follows:

| | Number of Jurisdictions | |
|---|---|---|
| Pool Size | Total | Liability |
| 1% | 15 | 10 |
| 1- 3% | 15 | 15 |
| 3- 5% | 7 | 8 |
| 5-10% | 9 | 10 |
| 10-15% | 3 | 5 |
| 15% | 2 | 3 |

The three states with liability shares greater than 15% all have different plan mechanisms, so this is not the cause for the large pool size. The plan size is a result of the voluntary rate adequacy - the perceived long-term voluntary rate adequacy. If the insurers perceive the rates to be inadequate they will refuse to write risks voluntarily and they will end up in the involuntary market. Many times the inadequacy is real. For example, in New Jersey the latest ISO rate change was 11.6% below the original indication and the New Jersey CAIP has been about 70% of ISO until recently when it increased to 80% of ISO. The New Jersey CAIP has consistently had lower rates than ISO. In South Carolina, the latest ISO increase was 62.6% short of the indication. And as for Massachusetts, the disagreements on rate adequacy are perennially in the press.

COMPANY ASSESSMENTS

The company assessment is the result of three items. The pool size and the pool operating ratio determine the total profit or loss to be shared by the participating companies. The company share is determined by the company participating ratio. Each of the methods for reflecting involuntary results in ratemaking must estimate these three items.

INVOLUNTARY COSTS

The standard method at my company for determining involuntary costs is a quick and easy method that uses readily available financial data. "Financial" is emphasized because it leads to the shortfalls of this method. Similar to the use of calendar year ratemaking rather than accident year, this procedure assumes a stable scenario in order to be accurate. More refined methods eliminate the need for these stability assumptions but take more time.

First, the involuntary loss for the past three years is determined. This information comes from the AIPSO participation reports or from company financial reports. Next, the voluntary written premium for the past three years is determined. This is Page 14 written premium minus any direct involuntary premium (from assigned risk or servicing business). The involuntary cost is the loss divided by the voluntary written premium. This procedure uses a three year average of these involuntary costs.

Contained within this method are certain assumptions regarding the three basic elements. For the operating ratio, the use of calendar year operating result rather than policy year assumes stability. The pool size is assumed to be relatively constant over time. The company's participation ratio is also assumed constant.

Obviously, these assumptions are hardly valid. In the most recent hard market, the involuntary markets grew tremendously. The mix in the residual markets also changed significantly with more truckers, etc. in the pools. Thus the stability assumptions are not accurate.

However, we still use this method since in most states the load is so small that the final indication is not sensitive to the accuracy of the load. There are a few cases where refinements are necessary because the size of the load requires the additional accuracy and the additional work is justified.

Refinements

The first refinement is to do a more accurate job of estimating the pool size. To start, express the pool as a percent of the total market. If the percent is stable over time, pool growth is due solely to market growth and/or rate changes. Then the future share for the pool is projected as a percentage of the total market. When projecting the pool size one must be conscious of the rate adequacy of the pool relative to the voluntary market and at what point in the insurance cycle you are projecting to and from, since the cycle has a tremendous effect on pool size.

The second area of refinement is in projecting the operating ratio for the pool. Start by adjusting history to an ultimate basis. AIPSO releases quarterly participation reports which can be used to derive loss development factors. Although IBNR is on the reports, I have found that due to the extreme growth in the CAIPs and their newness that there is still development that is unaccounted for in the reported IBNR. These loss ratios should then be adjusted for any projected change in rate adequacy for the pool. Also, an adjustment should be made for the impact that the change in pool size will have on the quality of business in the pool. Large growth implies that better quality business is flowing into the pool and large decline implies the opposite.

Finally, a more precise estimate of future participation ratios can be made. AIPSO releases participation data but it is not available very far in advance of the year it is used for. Another source is the A.M. Best A-7 reports. From these one must subtract the involuntary writings for your company and the industry. Or one can project future writings for the company and the industry.

Methods of Refining Load in Final Indication

There are two basic methods of how to reflect the involuntary cost (assesment as a % of voluntary written premium) in indications. The implicit method uses voluntary and involuntary combined for the experience. The implicit method is valid when both the voluntary and the involuntary get the same rate level and the mix and differential are assumed constant. This can only be used when direct experience is available.

The preferable method is the explicit method. The voluntary only experience is used and then a load for the involuntary cost is added. This is really the only valid method in CAIP states or other states using a modified JUA. The explicit method will always be valid when the implicit method is, but not vice-versa.

Examples of Involuntary loads in indications

Exhibits IV and V illustrate some examples of the explicit method. All examples assume that the involuntary cost, expressed as a % of voluntary premium is known with complete accuracy. The first set of examples, (Exhibit IV) is for a small involuntary cost with either no voluntary indication (Case I) or a moderate increase (Case II). The second set of examples (Exhibit V) is for a large involuntary cost. These examples illustrate the sensitivity of the methods to size of involuntary cost and size of the underlying voluntary rate need.

HIG Procedure

The first procedure is the one we use most often. This method adjusts the voluntary indication. The involuntary load is the involuntary cost divided by (1 - variable expenses). This is multiplied by the voluntary indications to get the final indication. The voluntary indication is derived by the standard ELR method. This method falls short of producing the desired 5% profit as the involuntary cost increases but tends to produce a higher profit as the underlying indication increases. This is only adequate when the involuntary cost is low and the indications are moderate. Its benefits are expediency.

The second procedure treats all expenses as variable and the involuntary cost is considered an additional "tax" item. Again this procedure yields a larger profit when the underlying indication is larger but also as the load increases. This method typically will overstate the indication and is therefore not desirable.

The most accurate method is to split the expenses into fixed and variable portions and treating the involuntary cost as a variable "tax item. The problem is in determining which expenses are fixed and which are variable.

Thank you for your time.

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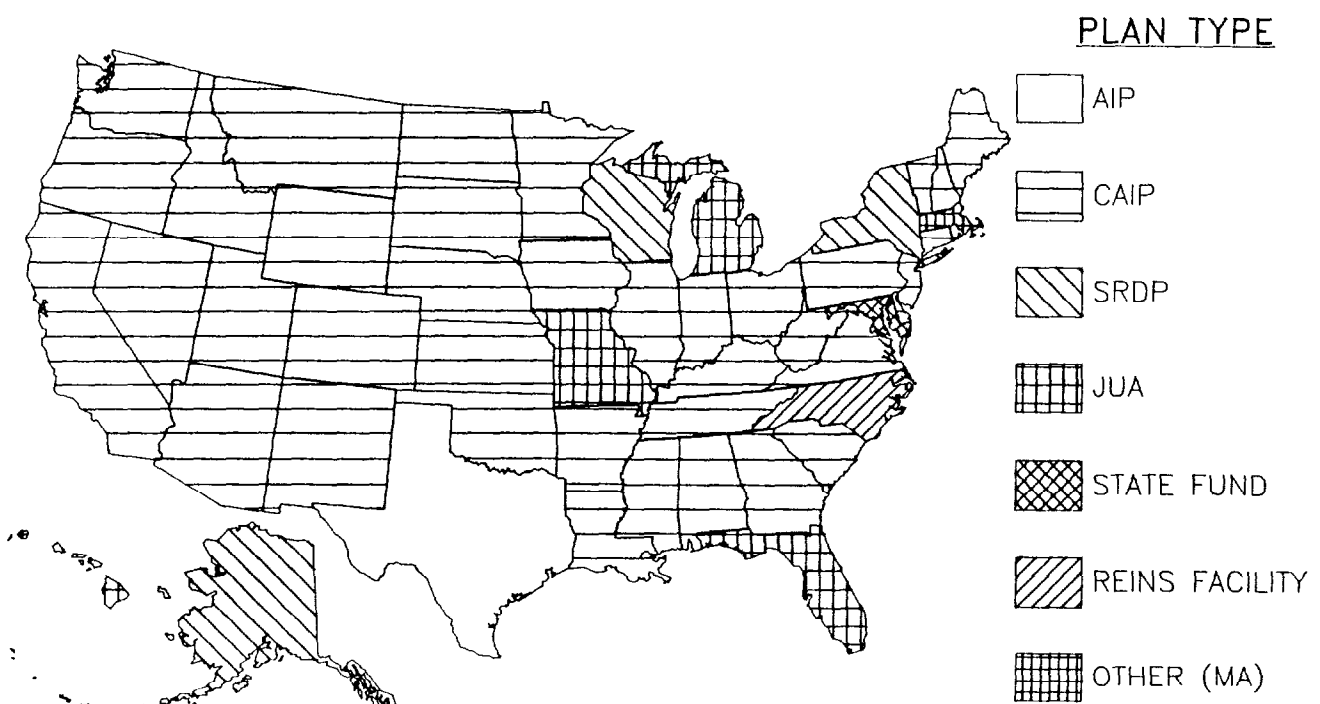
# COMMERCIAL AUTOMOBILE

## INVOLUNTARY MARKETS



# COMMERCIAL AUTOMOBILE

## INVOLUNTARY MARKETS

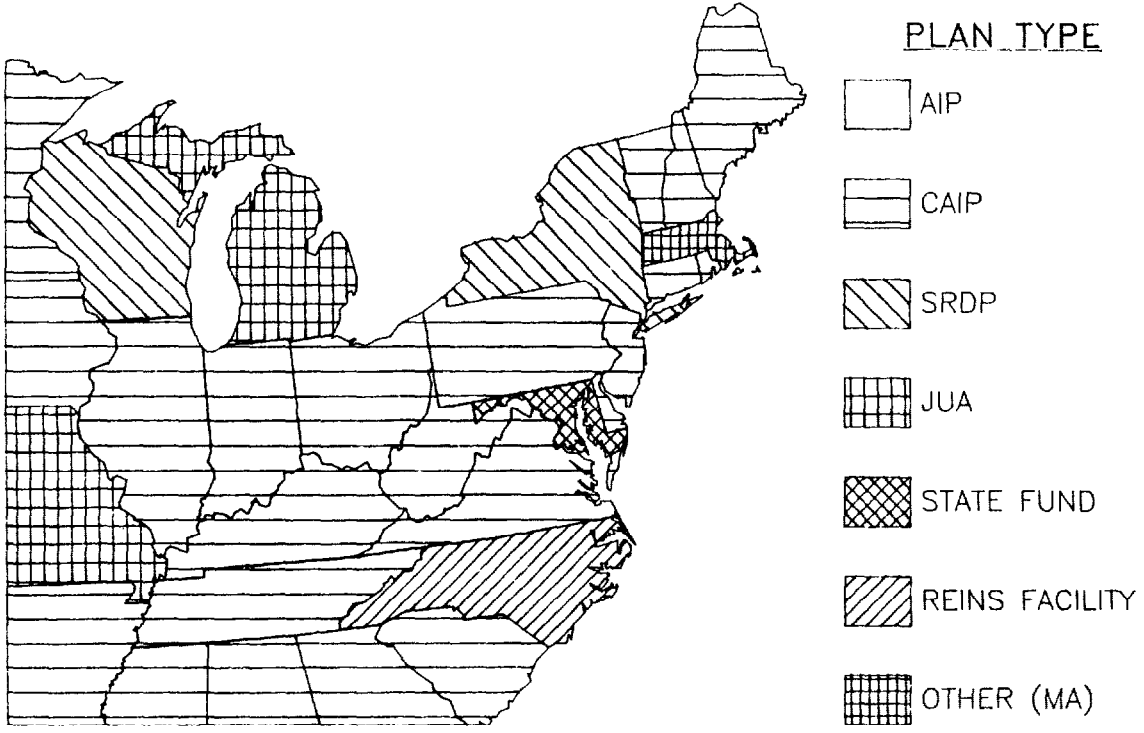





Exhibit Ic

# COMMERCIAL AUTOMOBILE

## INVOLUNTARY MARKETS

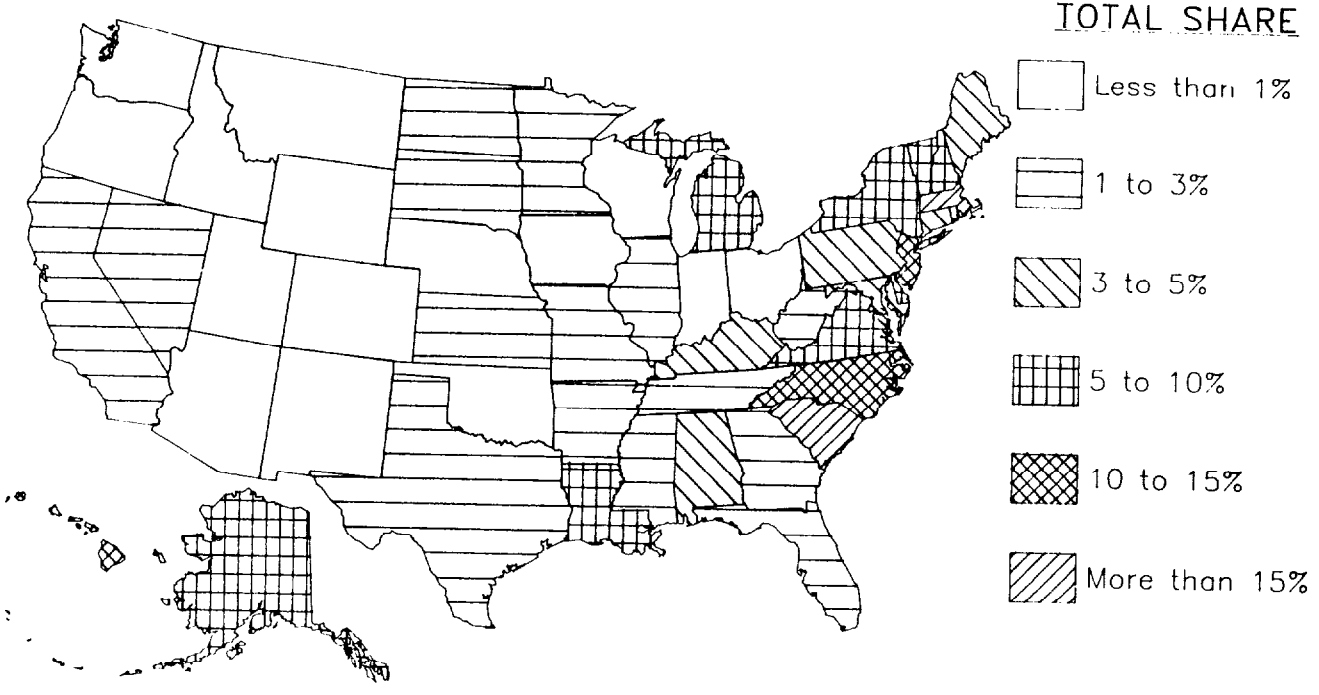





Exhibit II

# COMMERCIAL AUTOMOBILE
## INVOLUNTARY MARKETS

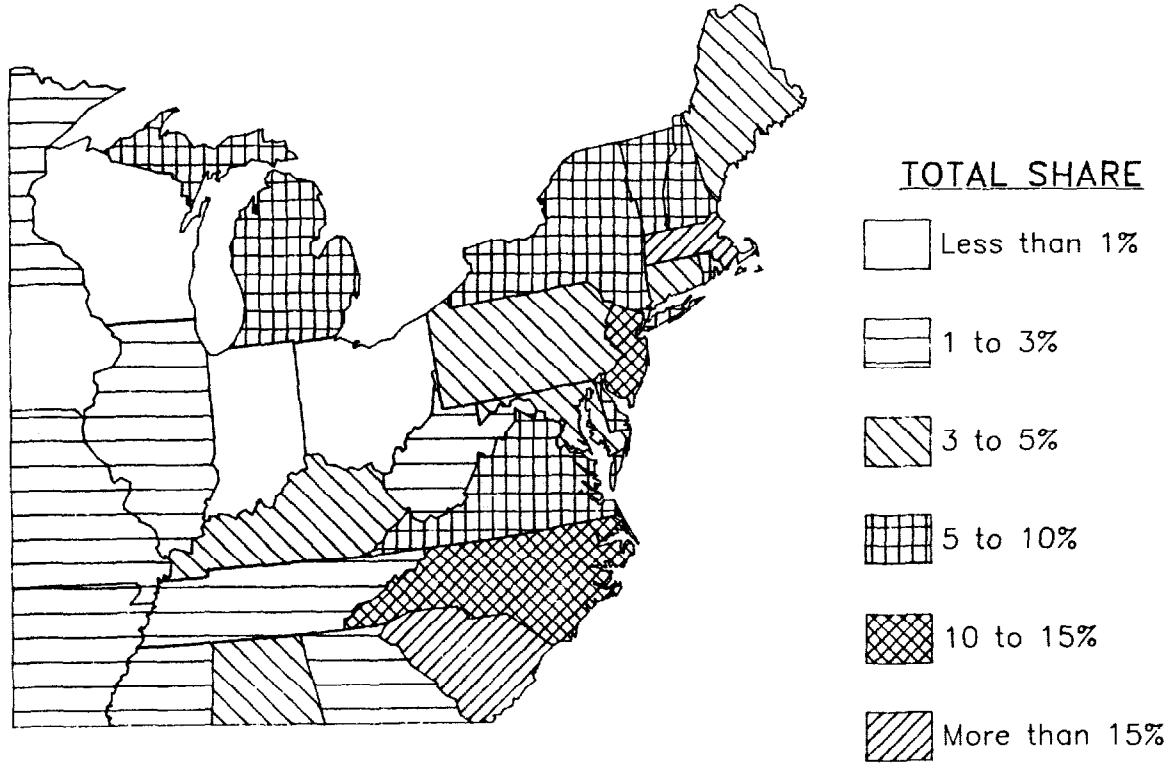





Exhibit II

# COMMERCIAL AUTOMOBILE

## INVOLUNTARY MARKETS

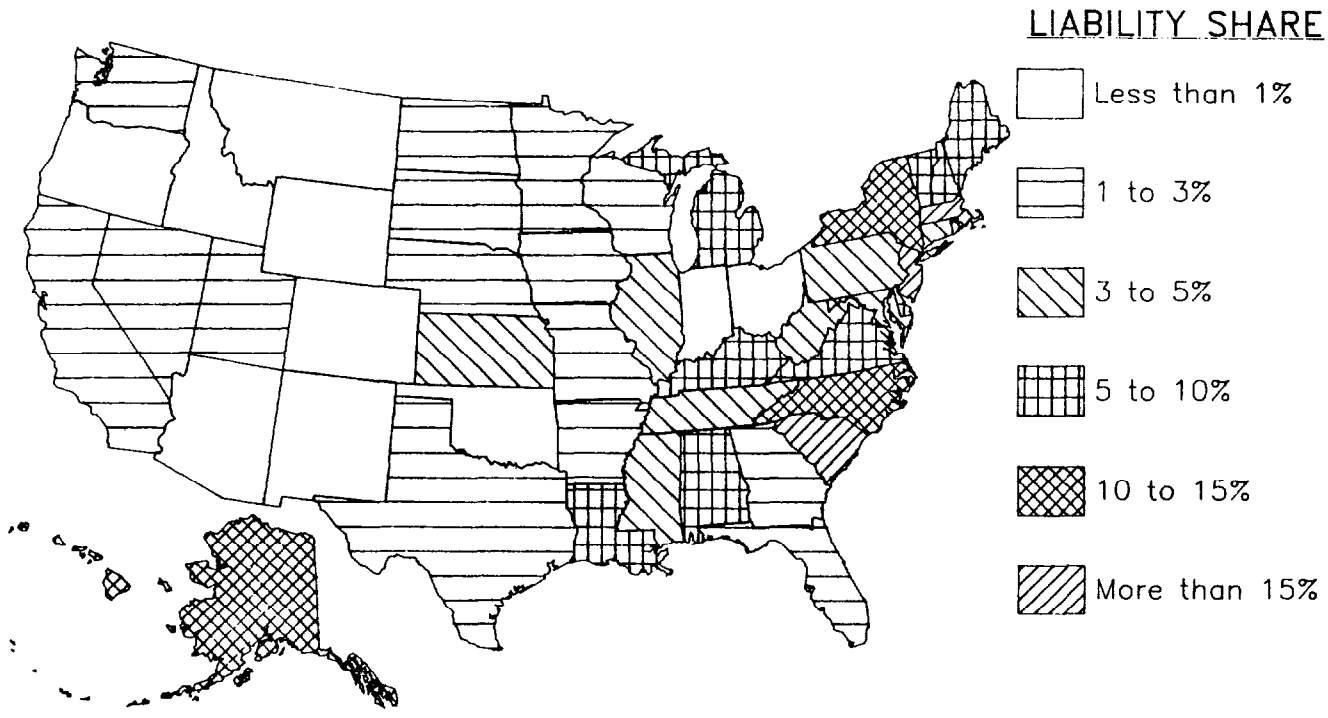





Exhibit II

# COMMERCIAL AUTOMOBILE
## INVOLUNTARY MARKETS

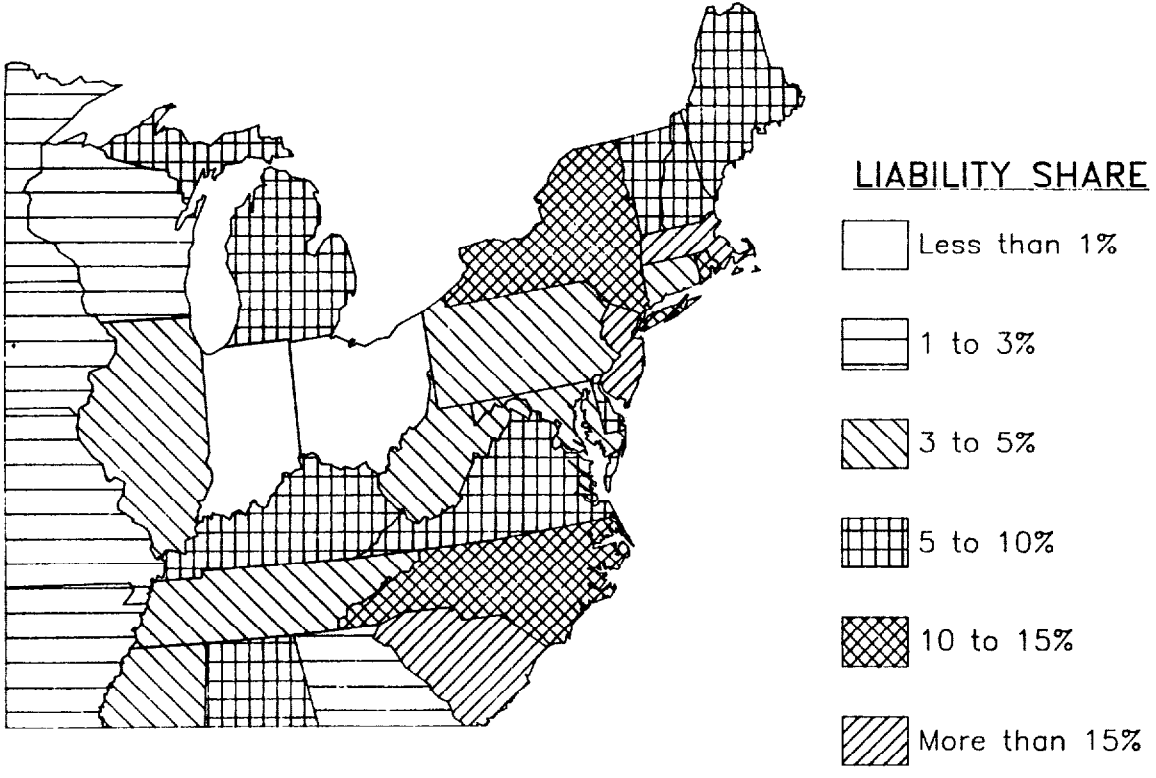





Exhibit 3

## ASSUMPTIONS

| | CASE I | CASE II |
|---|---|---|
| LOSS RATIO | 65.0% | 72.0% |
| EXPENSES | | |
| TAXES | 3.4% | 3.4% |
| COMMISSIONS | 15.1% | 15.1% |
| OTHER ACQ | 2.9% | 2.9% |
| PROFIT | 5.0% | 5.0% |
| VARIABLE-SUBTOTAL | 26.4% | 26.4% |
| GENERAL (FIXED) | 8.6% | 8.6% |

# COMPANY PROCEDURE

| | CASE I | CASE II |
|---|---|---|
| INVOLUNTARY COST | -0.8% | -0.8% |
| INVOLUNTARY LOAD | -1.09% | -1.09% |
| [INVOLUNTARY COST/(1 - VARIABLE EXPENSES)] | | |
| VOLUNTARY INDICATION (ELR) | 0.0% | +10.8% |
| FINAL INDICATION | +1.09% | +11.97% |
| (1 + VOLUNTARY INDICATION) * (1 - INVOLUNTARY LOAD) | | |
| RECONCILIATION | | |
| PREMIUM | $101.09 | $111.97 |
| LOSSES | $ 65.00 | $ 72.00 |
| TAXES | $ 3.44 | $ 3.81 |
| COMMISSIONS | $ 15.26 | $ 16.91 |
| OTHER ACQ | $ 2.93 | $ 3.25 |
| GENERAL | $ 8.60 | $ 8.60 |
| INVOLUNTARY | $ 0.81 | $ 0.90 |
| PROFIT | $ 5.05 | $ 6.52 |
| AS % OF PREMIUM | 5.0% | 5.8% |

ALL EXPENSES AS VARIABLE

| | CASE I | CASE II |
|---|---|---|
| INVOLUNTARY COST | -0.8% | -0.8% |
| FINAL INDICATION | +1.25% | +12.15% |
| LOSS RATIO/(1 - EXPENSES - INVOLUNTARY COST) | | |

RECONCILIATION

| | | |
|---|---|---|
| PREMIUM | $101.25 | $112.15 |
| LOSSES | $ 65.00 | $ 72.00 |
| TAXES | $ 3.44 | $ 3.81 |
| COMMISSIONS | $ 15.29 | $ 16.93 |
| OTHER ACQ | $ 2.94 | $ 3.25 |
| GENERAL | $ 8.60 | $ 8.60 |
| INVOLUNTARY | $ 0.81 | $ 0.90 |
| PROFIT | $ 5.17 | $ 6.65 |
| AS % OF PREMIUM | 5.1% | 5.9% |

# FIXED & VARIABLE EXPENSES

| | CASE I | CASE II |
|---|---|---|
| INVOLUNTARY COST | -0.8% | -0.8% |
| FINAL INDICATION | +1.10% | +10.71% |

(LOSS RATIO + FIXED EXPENSES)/(1 - VARIABLE EXPENSES - INVOLUNTARY COST)

RECONCILIATION

| | | |
|---|---|---|
| PREMIUM | $101.10 | $110.71 |
| LOSSES | $ 65.00 | $ 72.00 |
| TAXES | $ 3.44 | $ 3.76 |
| COMMISSIONS | $ 15.27 | $ 16.72 |
| OTHER ACQ | $ 2.93 | $ 3.21 |
| GENERAL | $ 8.60 | $ 8.60 |
| INVOLUNTARY | $ 0.81 | $ 0.89 |
| PROFIT | $ 5.05 | $ 5.54 |
| AS % OF PREMIUM | 5.0% | 5.0% |

Exhibit —
Page

COMPANY PROCEDURE

| | CASE I | CASE II |
|---|---|---|
| INVOLUNTARY COST | -5.0% | -5.0% |
| INVOLUNTARY LOAD | -6.79% | -6.79% |
| [INVOLUNTARY COST/(1 - VARIABLE EXPENSES)] | | |
| VOLUNTARY INDICATION (ELR) | 0.0% | +10.8% |
| FINAL INDICATION | 6.79% | +18.29% |
| (1 + VOLUNTARY INDICATION) * (1 - INVOLUNTARY LOAD) | | |

RECONCILIATION

| | | |
|---|---|---|
| PREMIUM | $106.79 | $118.29 |
| LOSSES | $ 65.00 | $ 72.00 |
| TAXES | $ 3.63 | $ 4.02 |
| COMMISSIONS | $ 16.13 | $ 17.86 |
| OTHER ACQ | $ 3.10 | $ 3.43 |
| GENERAL | $ 8.60 | $ 8.60 |
| INVOLUNTARY | $ 5.34 | $ 5.91 |
| PROFIT | $ 5.00 | $ 6.46 |
| AS % OF PREMIUM | 4.7% | 5.5% |

ALL EXPENSES AS VARIABLE

| | CASE I | CASE II |
|---|---|---|
| INVOLUNTARY COST | -5.0% | -5.0% |
| FIANL INDICATION | +8.33% | +20.00% |
| LOSS RATIO/(1 - EXPENSES - INVOLUNTARY COST) | | |
| RECONCILIATION | | |
| PREMIUM | $108.33 | $120.00 |
| LOSSES | $ 65.00 | $ 72.00 |
| TAXES | $ 3.68 | $ 4.08 |
| COMMISSIONS | $ 16.36 | $ 18.12 |
| OTHER ACQ | $ 3.14 | $ 3.48 |
| GENERAL | $ 8.60 | $ 8.60 |
| INVOLUNTARY | $ 5.42 | $ 6.00 |
| PROFIT | $ 6.13 | $ 7.72 |
| AS % OF PREMIUM | 5.7% | 6.4% |

# FIXED & VARIABLE EXPENSES

| | CASE I | CASE II |
|---|---|---|
| INVOLUNTARY COST | -5.0% | -5.0% |
| FINAL INDICATION | 7.29% | 17.49% |

(LOSS RATIO + FIXED EXPENSES)/(1 - VARIABLE EXPENSES - INVOLUNTARY COST)

RECONCILIATION

| | | |
|---|---|---|
| PREMIUM | $107.29 | $117.49 |
| LOSSES | $ 65.00 | $ 72.00 |
| TAXES | $ 3.65 | $ 3.99 |
| COMMISSIONS | $ 16.20 | $ 17.74 |
| OTHER ACQ | $ 3.11 | $ 3.41 |
| GENERAL | $ 8.60 | $ 8.60 |
| INVOLUNTARY | $ 5.36 | $ 5.87 |
| PROFIT | $ 5.36 | $ 5.87 |
| AS % OF PREMIUM | 5.0% | 5.0% |